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IMPACT AND RISK ASSESSMENT

The Proposed Development of a Small Beachfront Security Estate on Portions 66 and 67 of the Farm Brakkloof 443, Plettenberg Bay, Western Cape.

Each potential environmental impact and risk identified was assessed according to specific criteria. These included the nature, extent, duration, consequence, probability and frequency of identified impacts, including the degree to which these impacts can be reversed, may cause irreplaceable loss of resources, and can be avoided, managed or mitigated. The criteria are based on the EIA Regulations, published by the Department of Forestry, Fisheries and the Environment (April 1998) in terms of the Environmental Conservation Act No. 73 of 1989. These criteria include:

Nature of the impact

This is an estimation of the type of effect the construction, operation and maintenance of a development would have on the affected environment. This description should include what is to be affected and how.

Extent of the impact

Describe whether the impact will be: local extending only as far as the development site area; or limited to the site and its immediate surroundings; or will have an impact on the region or will have an impact on a national scale or across international borders.

Duration of the impact

The specialist should indicate whether the lifespan of the impact would be short term (0-5 years), medium term (5-15 years), long term (16-30 years) or permanent.

Intensity

The specialist should establish whether the impact is destructive or benign and should be qualified as low, medium or high. The specialist study must attempt to quantify the magnitude of the impacts and outline the rationale used.

Probability of occurrence

The specialist should describe the probability of the impact actually occurring and should be described as improbable/unlikely (low likelihood), probable (distinct possibility), highly probable (most likely) or definite (impact will occur regardless of any prevention measures).

<u>Reversibility</u>

- Completely reversible the impact can be reversed with the implementation of minor mitigation measures.
- Partly reversible the impact is reversible but more intense mitigation measures are required
- Barely reversible the impact is unlikely to be reversed even with intense mitigation measures
- Irreversible the impact is irreversible, and no mitigation measures exist

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Irreplaceable loss of resources

Describes the degree to which resources will be irreplaceably lost due to the proposed activity. It can be no loss of resources, marginal loss, significant loss or complete loss of resources.

Cumulative effect

An effect which in itself may not be significant but may become significant if added to other existing or potential impacts that may result from activities associated with the proposed development. The cumulative effect can be:

- Negligible the impact would result in negligible to no cumulative effect
- Low the impact would result in insignificant cumulative effects
- Medium the impact would result in minor cumulative effects
- High the impact would result in significant cumulative effects

Significance

Significance of impacts are determined through a synthesis of the assessment criteria and is described as -

- Low negative- where it would have negligible effects and would require little or no mitigation
- Low positive the impact will have minor positive effects
- Medium negative the impact will have moderate negative effects and will require moderate mitigation
- Medium positive the impact will have moderate positive effects
- High negative the impact will have significant effects and will require significant mitigation measures to achieve an accepted level of impact
- High positive the impact will have significant positive effects
- Very high negative the impact will have highly significant effects and are unlikely to be able to be mitigated adequately
- High positive the impact will have highly significant positive effects.



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Impacts foreseen during the construction phase for the Preferred Alternative (9 Residential Units):

Project Phase	Construction				
Impact	Clear	ance of vegetation for the const	ruction of the o	dwelling and associated	
		infrastr	ructure		
Description of	Loss of sens	itive dune vegetation, habitat lo	oss for terrestric	I wildlife, mortalities to various	
impact	species un	able to evade the disturbance,	loss of viable p	propagules, tragmentation of	
			ntrastructure	ficers a confirmer state	
Miligable		Miligation exists and will holdbi	y reduce signi	ncance of impacts	
mitigation		lopment area they should not	be impacted	by the building activities and	
minganon	shou	ld be conserved as small islands	s of natural re	sources for the small wildlife of	
	the c	area. These animals include skink	s, rodents, bird	ds and invertebrates.	
	 the r 	emoval and translocation of pro	tected plants	if found should be undertaken	
	prior	to construction clearing activitie	es. A permit is r	equired prior to removal.	
	 Prote 	ected plants must either be mov	ed to a safer,	no-go area on the property or	
	take	n to a nursery for temporary store	age until rehal	oilitation takes place.	
		ess by heavy machinery should b	be limited on f	he site.	
	Only rom	areas necessary for the develo	pment tootpri	int should be cleared and the	
	Durin	a the construction phase of the	proposed de	velopment disturbance to the	
	prime	arv dune system must be avoide	d.		
	 Layd 	lown areas for construction mat	erials must be	contained within the clearing	
	footp	print of the proposed developme	ent.	Ũ	
Assessment		Without mitigation With mitigation			
Nature	Negative	r	Low negative		
Duration	Permanent	Impact may be permanent,	Permanent	Impact may be permanent,	
		or in excess of 20 years		or in excess of 20 years	
Extent	Limited	Limited to the site and its	Very	Limited to the site and its	
Intensity (llich	Immediate surroundings	limited	Immediate surrounaings	
intensity	High	functions and (or processes	LOW	functions and/or processes	
		are significantly altered		are somewhat altered	
Probability	Certain /	There are sound scientific	Probable	Has occurred here or	
,	Definite	reasons to expect that the		elsewhere and could	
		impact will definitely occur		therefore occur	
Confidence	High	Substantive supportive data	Medium	Determination is based on	
		exists to verify the assessment		common sense and general	
				knowledge	
Reversibility	Low	The attected environment will	Medium	The affected environment	
		the impact permanently		will only recover from the	
		modified		intervention	
Resource	Hiah	The resource is damaged	Low	The resource is not	
irreplaceability		irreparably but is represented		damaged irreparably or is	
		elsewhere		not scarce	
Significance		Minor - negative	N	egligible - negative	
Comment on	The high infe	estation of alien species at the sit	e, together w	ith the absence of plant SCC	
significance	(high confid	ence) translates to a LOW site se	ensitivity.		
Cumulative	The impact	would result in insignificant cumu	lative effects		
impacts					

Project Phase		Constr	ruction				
Impact		Landscape Connectivity					
Description of	Cut-off of natural dispersal and foraging movement by animals, impacts on suitable link						
impact		or important corridor, fragmento	ation of ecolog	gical infrastructure			
Mitigable	Low	Mitigation will slightly reduce th	e significance	of impacts			
Potential	• The a	Sm wide servitude along the north	nern boundary	of the development area can			
mitigation	serve	e as a minor corridor for smaller	wildlife, linking	g the wetland to the west with			
	the c	coastal dunes to the east, provide	ed that it is kep	ot clear of invasive alien plants.			
	• Biodi	iversity conservation of the impo	rtant coastal t	oredune habitat that serves as			
A	a mi	nor faunal corridor along the edg	ge of the prop	perty.			
Assessment		Without mitigation	N I a su al l'una	With mitigation			
Nature	Negative		Negative				
Duration	Permanent	Impact may be permanent,	Permanent	Impact may be permanent,			
Extent	Limitad	Unificate the site and its	Von	Unificate the site and its			
Extent	Limited	immediate surroundings	limited	Limited to the site and its			
Intensity		Natural and/or social	Verylow	Natural and/or social			
mensity		functions and/or processes	V CI Y IOW	functions and/or processes			
		are somewhat altered		are slightly altered			
Probability	Probable	Has occurred here or	Rare /	Conceivable, but only in			
,		elsewhere and could	improbable	extreme circumstances,			
		therefore occur		and/or might occur for this			
		project although this has					
		rarely been known to result					
	elsewhere			elsewhere			
Confidence	High	Substantive supportive data	Medium	Determination is based on			
		exists to verify the assessment		common sense and general			
				knowledge			
Reversibility	Low	The affected environment will	Medium	The affected environment			
		not be able to recover from		will only recover from the			
		medified		intervention			
Pesource	Medium	The resource is damaged					
irreplaceability	Mediom	irreparably but is represented	LOW	damaged irreparably or is			
mephaecability		elsewhere		not scarce			
Significance		Minor - negative	N	egligible - negative			
Comment on	The natural	fauna in the foredune and we	tland areas r	nay be intact, but the line of			
significance	developme	nt along the coast has effectiv	vely cut-off n	atural dispersal and foraging			
-	movement l	by animals (with the exception o	f some birds) k	petween the two habitat types			
	in the area.	The study site thus represents a ve	ery narrow and	relatively natural link between			
	the natural h	nabitats between the foredune c	area and the v	vetland. This link is however not			
	considered	to be a suitable link or importe	ant corridor d	ue to its narrow width and its			
	generally po	por condition, translating to a LO	W site sensitivit	ty			
Cumulative	The impact	would result in insignificant cumu	lative effects				
impacts							

Project Phase	Construction					
Impact	Primary Dune System					
Description of	Im	pacts on natural coastal foredu	ne habitat, inc	creased wind erosion		
impact						
Mitigable	Medium	Mitigation exists and will notabl	y reduce signi	ficance of impacts		
Potential	• The p	primary dune system at the beac	ch front (mostly	outside the properties) should		
mitigation	not	be disturbed during the co	nstruction or	operational phases of the		
	deve	elopment.				
	This c	area must be actively excluded t	rom the devel	oped area and must not suffer		
	the .	dumping and other negative in	mpacts that s	o offen accompany building		
	proje	CTS.				
	• Ine (area musi be designated as a in	NO GO died.	urd walk system will have to be		
		tructed to minimize disturbance	of this sensitive	area		
Assessment	CONS	Without mitigation		With mitigation		
Nature	Negative		Low pegative			
Duration	Permanent	Impact may be permanent	Permanent	Impact may be permanent		
Deralleri		or in excess of 20 years	1 onnarioni	or in excess of 20 years		
Extent	Limited	Limited to the site and its	Verv	Limited to the site and its		
		immediate surroundings	limited	immediate surroundings		
Intensity	Low	Natural and/or social	Very low	Natural and/or social		
		functions and/or processes		functions and/or processes		
		are somewhat altered		are slightly altered		
Probability	Probable	Has occurred here or	Rare /	Conceivable, but only in		
		elsewhere and could	improbable	extreme circumstances,		
	therefore occur and/or might occur for th					
	project although this has					
				rarely been known to result		
Confidence				elsewhere		
Confidence	High	substantive supportive data	Mealum	Determination is based on		
		exists to verify the assessment		common sense and general		
Povorsibility		The affected environment will	Modium	The affected environment		
Reversionity	LOW	not be able to recover from	Medium	will only recover from the		
		the impact - permanently		impact with significant		
		modified		intervention		
Resource	Medium	The resource is damaged	Low	The resource is not		
irreplaceability	irreparably but is represented		_	damaged irreparably or is		
. ,	elsewhere not scarce					
Significance		Minor - negative	N	egligible - negative		
Comment on	This is an imp	portant coastal habitat that shoul	d be conserve	d for biodiversity conservation,		
significance	to prevent ir	ncreased wind erosion and as a	minor faunal o	corridor along the edge of the		
	property.					
Cumulative	The impact	would result in insignificant cumu	ulative effects			
impacts						

Project Phase	Construction			
Impact		Sedimentation		
Description of	Sedin	nentation of the wetland caused by erosion from the construction site.		
impact				
Mitigable	Medium	Mitigation exists and will notably reduce significance of impacts		
Potential	• A silt fence must be installed perpendicular to the angle of the slope to trap any			
mitigation	soil c must Robb • The s bein	or sediment mobilised from the site during the construction phase. Silt fences be installed between the site and the Robberg Road, and in between berg Road and the buffer. ite must be monitored after every rainfall event to ensure that no sediment is g washed into the wetland by erosion.		

	 The laydown area and stockpiles of construction materials or excavated materials must be located on as flat an area as possible and should not drain towards the wetland. If necessary, stockpiles must be protected (e.g. through use of sandbags and/or tarpaulins) to prevent materials being washed downslope towards the wetland. 					
Assessment		Without mitigation		With mitigation		
Nature	Negative		Low negative	Low negative		
Duration	Short term Impact will last between 1 E and 5 years		Brief	Impact will not last longer than 1 year		
Extent	Very limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings		
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Very low	Natural and/or social functions and/or processes are slightly altered		
Probability	Likely	The impact may occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere		
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment		
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact		
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce		
Significance	١	legligible - negative	N	egligible - negative		
Comment on significance	The lower section of the development slopes down towards the wetland. Clearing areas of the site and the road in preparation for construction will expose bare soil which could potentially be mobilised into the wetland during heavy rainfall events. The buffer is however expected to provide good protection under such circumstances.					
Cumulative impacts	The impact would result in insignificant cumulative effects.					

Project Phase	Construction				
Impact		Waste P	ollution		
Description of	Pollutior	n of wetland and buffer caused l	by waste generated by the construction		
impact		proc	cess.		
Mitigable	High	Mitigation exists and will consid	erably reduce significance of impacts		
Potential mitigation	 All caman supp All ca wast No ca take The la any Adea throut facilities 	onstruction waste generated on- aged. Separation and recyclir ported. onstruction waste materials must e facility. dumping of construction materic place. buffer and wetland area must b waste that may have been blow quate sanitary facilities and ab ughout the project area. Use of ties must be kept clean so th unding vegetation).	site during construction must be adequately ag of different waste materials should be be collected and disposed of at a suitable al within the wetland or wetland buffer may be monitored on a weekly basis to clean-up on from the construction site; and alutions must be provided for all personnel of these facilities must be enforced (these hat they are a desired alternative to the		
Assessment		Without mitigation	With mitigation		
Nature	Negative	_	Low negative		

			D · · ·		
Duration	Short term	Impact will last between I	Briet	Impact will not last longer	
		and 5 years		than 1 year	
Extent	Very	Limited to the site and its	Very	Limited to the site and its	
	limited	immediate surroundings	limited	immediate surroundings	
Intensity	Low	Natural and/or social	Very low	Natural and/or social	
		functions and/or processes	,	functions and/or processes	
		are somewhat altered		are slightly altered	
Probability	Likely	The impact may occur	Rare /	Conceivable, but only in	
, , , ,			improbable	extreme circumstances	
				and/or might occur for this	
				project although this has	
				rarely been known to result	
Confidence	Hiah	Substantive supportive data	Hiah	Substantive supportive data	
connachee	ingri	exists to verify the assessment	light	exists to verify the	
				assessment	
Povorsibility	High	The affected environmental	High	The affected environmental	
Reversionity	riigii	will be able to receiver from	riigi i	will be able to receiver from	
		will be able to recover from			
	1		1		
Resource	LOW	Ine resource is not aamagea	LOW	Ine resource is not	
irreplaceability		irreparably or is not scarce		aamagea irreparably or is	
				not scarce	
Significance	1	Negligible - negative	N	egligible - negative	
Comment on	Construction	n activities are likely to generate :	significant quc	Intities of solid waste that could	
significance	pollute the v	wetland and buffer area. In addit	ion, the high n	umbers of construction workers	
	present on site will generate a significant amount of human waste, which could also				
	pollute the	wetland.			
Cumulative	The impact	would result in insignificant cumu	ulative effects.		
impacts					

Project Phase	Construction						
Impact	Construction Vehicles						
Description of impact	Impairme ve	Impairment of water quality and disturbance to buffer caused by the operation of vehicles and heavy machinery within close proximity to the wetland.					
Mitigable	High	Mitigation exists and will consic	lerably reduce	e significance of impacts			
Potential mitigation	 Con prev No v must Exco leak No fi on th Refu vehi bund poss or p weth The any 	struction activities must be com rent unnecessary disturbance to rehicles are to park or operate wi to be restricted to Robberg Road avators and all other machinery of s daily. No machinery or vehicles uel storage, refuelling, vehicle m he slope leading towards the we relling and fuel storage areas, and cles and machinery, must be lood ds around them (sized to contain ible spills. These areas must not be referential flow paths and must and. contractors used for the project fuel or oil spills are clean-up and	fined to clear the wetland of thin the buffer or the eastern and vehicles m s with leaks are aintenance of tland. nd areas used cated on impe- n 110 % of the be located with st be located should have sp discarded co	ly demarcated areas so as to and buffer. of the wetland (i.e. all activities side of Robberg Road). hust be checked for oil and fuel e permitted to work on site. r vehicle depots to be allowed I for the servicing or parking of ervious bases and should have tank capacity) to contain any hin any natural drainage areas outside of the buffer of the pill kits available to ensure that rrectly.			
Assessment		Without mitigation		With mitigation			
Nature	Negative	1	Low negative	e			
Duration	Short term	Impact will last between 1 and 5 years	Brief	Impact will not last longer than 1 year			
Extent	Very limited	Limited to the site and its immediate surroundinas	Very limited	Limited to the site and its immediate surroundings			

Intensity	Low	Natural and/or social	Very low	Natural and/or social	
		functions and/or processes		functions and/or processes	
		are somewhat altered		are slightly altered	
Probability	Likely	The impact may occur	Rare /	Conceivable, but only in	
			improbable	extreme circumstances,	
				and/or might occur for this	
				project although this has	
				rarely been known to result	
				elsewhere	
Confidence	High	Substantive supportive data	High	Substantive supportive data	
		exists to verify the assessment		exists to verify the	
				assessment	
Reversibility	High	The affected environmental	High	The affected environmental	
		will be able to recover from		will be able to recover from	
		the impact		the impact	
Resource	Low	The resource is not damaged	Low	The resource is not	
irreplaceability		irreparably or is not scarce		damaged irreparably or is	
				not scarce	
Significance	Negligible - negative Negligible - negative				
Comment on	Operation of vehicles in close proximity to the wetland could result in spillages or leaks of				
significance	hydrocarbons (fuel and oil) and could lead to unnecessary disturbance of the wetland				
	and its buffer.				
Cumulative	The impact	would result in insignificant cumu	lative effects.		
impacts					

Project Phase	Construction						
Impact	Geotechnical restraints due to sandy soils						
Description of	Settlement issues, slope stability problems, potential erosion.						
impact							
Mitigable	High Mitigation exists and wil	considerably reduce significance of impacts					
Potential mitigation	 Areas that are disturbed through be sewerage pipelines) should be suited so will have a knock-on effect on be erosion, soil exposure and a loss of the plant growth. Use of complete cover of locally checyclops stems and branches but not cyclops stems and branches but not be foundations: The four stands positioned to the we and care is required to minimize of here mini or bored piles could be e On the remainder of the sites (five e is more even rafts and re-compact can be protected by shoring. The founding conditions improve w Organic matter, such as roots and footprint of structures and stockpile Excavations may be highly unstablishoring of excavation sidewalls marequired along site boundaries. Piled foundations should only be compared to the store of the store o	uilding activities (such as the excavations for ably rehabilitated without delay. Failure to do iodiversity in the form of an increase in wind the soil micro-organisms that are essential for hipped woody material (for example Acacia of the seed pods). est of the site are on top of the respective dunes damage to the surrounding environment and mployed after a platform has been cut. eastern stands) where the existing ground level tion operations can be done and side slopes ith depth in these dune sand areas. d humus/topsoil should be removed from the d separately for landscaping purposes. e at angles steeper than 35° and battering or y be required. Lateral support systems may be					
	inis method is generally uneconomi	Ical in the area abe to high establishment costs					
Assessment	Without mitigation	With mitigation					
Nature	Negative	Negative					

Duration	Permanent	Impact may be permanent, or in excess of 20 years	Brief	Impact will not last longer than 1 year	
Extent	Very limited	Limited to specific isolated parts of the site	Very limited	Limited to specific isolated parts of the site	
Intensity	Very high	Natural and/ or social functions and/ or processes are majorly altered	Low	Natural and/or social functions and/or processes are somewhat altered	
Probability	Certain / Definite	There are sound scientific reasons to expect that the impact will definitely occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	
Confidence	High	Substantive supportive data exists to verify the assessment	Medium	Determination is based on common sense and general knowledge	
Reversibility	Low	The affected environment will not be able to recover from the impact - permanently modified	Medium	The affected environment will only recover from the impact with significant intervention	
Resource	Not relevant		Not		
Significance	Modero	ate - negative	relevant	Negligible - negative	
Comment on significance	The natural angle of repose is at least approximately 40° but excavated faces in the neighboring property remained marginally stable for extended periods at over 50°. This was especially evident where there were fine roots present in the excavated face. Shoring was not required in cut of up to 2m deep.				
Cumulative impacts	Without mitigation, the geotechnical restraints on the site could result in significant destruction to the development site.				

Project Phase	Construction					
Impact		Noise pollution				
Description of		Noise caused by m	achinery and	l staff		
impact						
Mitigable	Low	Mitigation does not exist;	or mitigation	will slightly reduce the		
		significance of impacts				
Potential	Constructio	n activities must only take	place during	normal working times between		
mitigation	07:00-17:00	on weekdays.				
	 Machinery I 	 Machinery may be fitted with silences to dampen noise. 				
	 Staff must b 	aff must be reminded that they are working within a residential area and noise				
	levels must be kept low.					
Assessment	Without mitigation With mitigation					
Nature	Negative		Negative			
Duration	Brief	Impact will not last	Brief	Impact will not last longer		
		longer than 1 year		than 1 year		
Extent	Limited	Limited to the site and	Limited	Limited to the site and its		
		its immediate		immediate surroundings		
		surroundings				
Intensity	Very low	Natural and/ or social	Negligible	Natural and/ or social		
		functions and/ or		functions and/ or processes		
		processes are slightly		are negligibly altered		
		altered				

Probability	Almost certain / Highly probable	It is most likely that the impact will occur	Almost certain / Highly probable	It is most likely that the impact will occur	
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge	
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact	
Resource	Not relevant		Not		
irreplaceability			relevant		
Significance	Minor - negative Negligible - negative				
Comment on significance	Some extent of noise pollution during construction is expected; however, with mitigation the impact will be reduced.				
Cumulative impacts	No cumulative imp	acts exist.			

Project Phase		Construction				
Impact	Visual impact					
Description of	Visual & aesthetic consequences of the proposed project					
Mitigable	Medium	Medium Mitigation exists and will notably reduce significance of impacts				
Potential	Ihe Archite	ectural Design Guidelines	proposed to	or the development must be		
mitigation	adopted to	mitigate the colours, heig	ghts, disturbai	nce areas, maximum tootprint,		
		, eic, which will dir com		sindler visual impact on the		
	• The necess	sarv measures be implen	nented durin	a the construction phase to		
	protect the	natural vegetation, to co	ntrol the noise	e, dust and visual intrusion.		
	Appoint a L	andscape consultant to re	ecommend c	ind implement the introduction		
	of an indig	enous landscape plan to	protect the	existing indigenous vegetation		
	and to prep	pare a landscape plan for	implementat	ion in the private and common		
	areas.					
	Implement external lighting restrictions and guidelines.					
Assessment	Without mitigation		With mitigation			
Nature	Negative		Negative			
Duration	Short term	hotwoon 1 and 5 years	short term	and 5 years		
Extent	Limited	Limited to the site and	Limited	Limited to the site and its		
EXICIL		its immediate		immediate surroundings		
		surroundings				
Intensity	Low	Natural and/ or social	Very low	Natural and/or social		
		functions and/ or		functions and/or processes		
		processes are		are slightly altered		
		somewhat altered				
Probability	Certain / Definite	There are sound	Likely	The impact may occur		
		scientific reasons to				
		expect that the impact				
Confidence	High		High	Substantivo supportivo data		
Connuence	riigii	data exists to verify the	riigi	exists to verify the		
		assessment		assessment		
Reversibility	Medium	The affected	High	The affected environmental		
		environment will only	Ŭ	will be able to recover from		
		recover from the		the impact		

		impact with significant intervention		
Resource	Not relevant		Not	
irreplaceability			relevant	
Significance	Minor	r - negative	N	egligible - negative
Comment on significance	The proposal is ser unique sense of pla area.	isitive towards the charac ce that will blend in and co	cter of the ar ompliment the	ea and attempts to create a e ambience of the surrounding
Cumulative	No cumulative imp	acts exist.		
impacts				

Project Phase		Constru	ction		
Impact	Employment				
Description of	Empowerment of th	Empowerment of the local community members living in the area relating to temporary			
impact		employment o	pportunities		
Mitigable	Medium	Medium Mitigation only exists to ensure that the positive impact is followed			
Potontial	- Uso ovisting	Infoght.	ommunicatio	n channels to onsure social	
rolennal			ommonicano	in channels to ensure social	
minganon	 Use local lab 	our and source local mat	erials as far a	s possible.	
Assessment	Withou	ut mitigation		With mitigation	
Nature	Negative		Positive	.	
Duration	Short term	Impact will last	Short term	Impact will last between 1	
		between 1 and 5 years		and 5 years	
Extent	Local	Extending across the site and to nearby settlements	Local	Extending across the site and to nearby settlements	
Intensity	Low	Natural and/ or social functions and/ or processes are somewhat altered	Low	Natural and/ or social functions and/ or processes are somewhat altered	
Probability	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	Almost certain / Highly probable	It is most likely that the impact will occur	
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge	
Reversibility	Not relevant		Not relevant		
Resource	Not relevant		Not		
irreplaceability			relevant		
Significance	Negligik	ole - negative	1	legligible - positive	
Comment on significance	Due to the proposed development being on a small-scale, there is a low difference in impacts between without mitigation and with mitigation. However, as the impact would be positive for the local community to be employed during construction, mitigation is recommended to ensure this occurs.				
Cumulative impacts	Minor upliftment for	the local community.			

Impacts foreseen during the operational phase for the Preferred Alternative (9 Residential Units):

Project Phase		Operc	ation	
Impact	Visual / Sense of place			
Description of impact	Visual impacts of structures / aesthetic consequences due to incorrect or excessive lighting, especially outdoor lighting			
Mitigable	Medium	Mitigation exists and will	notably reduc	e significance of impacts
Potential	 Municipal b 	y-laws need to be adhere	d to.	
mitigation	 Re-vegetation 	ion and Landscaping of c	ppen space a	reas with suitable indigenous
	vegetation.			
	 Systematic 	removal and follow-up op	erations of invo	asive alien plants.
	Adhere to A	Architectural Guidelines an	id Design Man I	
Assessment	Witho	ut mitigation		With mitigation
Nature	Negative	T	Negative Lov	N
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Brief	Impact will not last longer than 1 year
Extent	Limited	Limited to the site and its immediate surroundings	Limited	Limited to the site and its immediate surroundings
Intensity	Low	Natural and/ or social functions and/ or processes are somewhat altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered
Probability	Probable	Has occurred here or elsewhere and could therefore occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	High	The affected environmental will be able to recover from the impact
Resource irreplaceability	Not relevant		Not relevant	
Significance	Mino	r - negative	Ne	egligible - negative
Comment on	Lighting, specifical	y outdoor lighting is not on	ly aesthetic. b	ut it provides a level of
significance	security to property owners. Therefore, outdoor lighting is essential, but should be implemented in a way which does not cause negative impacts to neighbours. The planned residential development will be similar to existing and planned residential developments to the north and south of the property. The site lies within the urban edge for Plettenberg Bay and the proposed upmarket residential development is compatible with surrounding land uses. The proposal is sensitive towards the character of the area and attempts to create a unique sense of place that will blend in and compliment the ambience of the surrounding area.			
Cumulative	Without mitigation	the development would n	ot be meeting	design guidelines enforced
impacts	by the municipality	. Specifically design guide	lines for the loc	cal area.

Project Phase	Operation					
Impact		Stormwater M	anaaement			
Description of		Accelerated erosion / polluti	ion into sub-surface	water.		
impact						
Mitigable	High Mitigation exists and will considerably reduce the significance of impacts					
Potential	• A	storm water drainage system as indice	ated in the EMPr mu	ust be adhered to and the		
mitigation	S	ystem should lead run- off water away	from sensitive area	as, in order to prevent any		
	S	oil erosion.				
	• U	se rainwater collection tanks to serve	as a retention vesse	el in downpours.		
	• D	priveways can be constructed from gr	ass blocks to allow	for effective retarding of		
	SU	urface flow and facilitate percolation.				
	•	ne common roadways will have a kerk	and channel side	drain where mostly water		
		om the road is collected, transported	and transferred to	a frapezoidal grass block		
	SI	de arain and aiscnargea into an effec	ctive 1,2m deep still	ing gabion champer that		
		nii aiso serve as a sin irap.	realation and will n	at have an outlet		
		le refermion chamber will facilitate pe		or have an oolier.		
Assessment		Without mitigation	Wit	h mitigation		
Nature	Negative		Low Negative			
Duration	Short	Impact will last between 1 and 5	Brief	Impact will not last		
	term	years		longer than 1 year		
Extent	Limited	Limited to the site and its	Very limited	Limited to specific		
		immediate surroundings		isolated parts of the		
				site		
Intensity	Low	Natural and/or social functions	Very low	Natural and/ or social		
		and/or processes are somewhat		functions and/ or		
		altered		processes are slightly		
Day has hall the	A	14 factor and 19 and the addition former and the 20	David (
Probability	Almost	It is most likely that the impact will	Kare /	Conceivable, but only		
	Cendin	certain occur improbable in extreme				
	Circumstances, and/or					
	might occur for this project although this					
	has rarely been known					
				to result elsewhere		
Confidence	Hiah	Substantive supportive data exists	Hiah	Substantive supportive		
		to verify the assessment	0	data exists to verify the		
				assessment		
Reversibility	Mediu	The affected environment will only	High	The affected		
	m	recover from the impact with		environmental will be		
		significant intervention		able to recover from		
				the impact		
Resource	Low	The resource is not damaged	Low	The resource is not		
irreplaceabilit		irreparably or is not scarce		damaged irreparably		
y				or is not scarce		
Significance	The state	Negligible - negative	Mine Mine	or - negative		
Comment on	Ine deve	elopment has a small catchment area	. Ine development	nas permeable dune		
significance	sana soil	conditions and noticeable runoff is no	or envisagea. There	are also large open		
Cumulative	Without	nere runori can be assipated.	tontial gracion day	whill of the site as used		
impacts	bystorm	migation mis impact could result in po water flow	Jennial erosion dov	whimin of the site caused		
impucis	L D X SIOIIII					

Project Phase		Opera	tion	
Impact		Stormwater Runo	ff into Wetland	
Description of	Alter	ation of surface flows into the wetland	caused by increa	sed stormwater runoff.
impact				
Mitigable	High M	Aitigation exists and will considerably re	educe the significa	ance of impacts
Potential	• St	tormwater from erven on the west f	acing slope of th	ne development must be
mitigation	a	ttenuated on site.		
	• St	tormwater from the access road leadin	g into the develop	pment must be attenuated
	0	nsite (prior to any discharge into the b	utter of the wetlar	nd).
	• A	suitable stormwater plan must be cor	npiled for the sect	tion of Robberg Road that
	W h	vill be farred and upgraded. The plan h	nust discharge stol	rmwater into the adjacent
	D ++	uner dred without causing any erosi	on. The funolitive	iocity of stormwater must
	l lí	uffer	aparers prior to ai	scharge into the welland
Assessment		Without mitigation	Wi	th mitigation
Nature	Negative		Low Negative	
Duration	Perman	Impact may be permanent or in	Permanent	Impact may be
Doralion	ent	excess of 20 years	1 officiation	permanent or in
	••••			excess of 20 years
Extent	Very	Limited to specific isolated parts of	Very limited	Limited to specific
	limited	the site	,	isolated parts of the
				site
Intensity	Mediu	Natural and/or social functions	Low	Natural and/or social
	m	and/or processes are notably		functions and/or
		altered		processes are
				somewhat altered
Probability	Almost	It is most likely that the impact will	Rare /	Conceivable, but only
	cendin	occur	elabaoiqui	in exiteme
				might occur for this
				project although this
				has rarely been known
				to result elsewhere
Confidence	High	Substantive supportive data exists	High	Substantive supportive
		to verify the assessment		data exists to verify the
				assessment
Reversibility	High	The affected environmental will be	High	The affected
		able to recover from the impact		environmental will be
				dble to recover from
Pesource		The resource is not damaged		The resource is not
irreplaceabilit	LOW	irreparably or is not scarce		damaged irreparably
V				or is not scarce
Significance		Minor - negative	Neglig	gible - negative
Comment on	The deve	elopment will result in an increase in the	e area of paved/h	nardened surfaces. This will
significance	generate	e increased volumes of stormwater rund	off which will flow c	lown towards the wetland.
	The main entrance road leading from Robberg Road into the development is also likely to			
	become an important conduit for stormwater down towards the wetland, as will the			
	upgrade	d section of Robberg Road. Existing	g developments	along tarred sections of
	Robberg	Koaa (to the south) have not resulted	in obvious impact	s the wetland as a result of
	stormwa	the intensity of this impact	or stormwater she	ouid meretore effectively
Cumulativo	Without	me mensity of this impact.	tential stormwate	r rupoff downbill of the site
impacts	towards	the wetland.		
	10110103			

Project Phase		Opera	tion		
Impact		Impervious Surfaces	and Foundations		
Description of impact	Alteration	Alteration of sub-surface flows into the wetland caused by impervious surfaces and foundations			
Mitigable	High Mitigo	ition exists and will considerably re	educe the significa	ince of impacts	
Potential	• Storm	water management should enco	urage infiltration o	f water into the soil profile	
mitigation	and o	ther on site attenuation (i.e. using	grass pavers etc.)	•	
Assessment		Without mitigation	Wi	th mitigation	
Nature	Negative	1	Low Negative		
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Permanent	Impact may be permanent, or in excess of 20 years	
Extent	Very limited	Limited to specific isolated parts of the site	Very limited	Limited to specific isolated parts of the site	
Intensity	Very low	Natural and/ or social functions and/ or processes are slightly altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered	
Probability	Probable	Has occurred here or elsewhere and could therefore occur	Probable	Has occurred here or elsewhere and could therefore occur	
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment	
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact	
Resource irreplaceabilit y	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce	
Significance		Minor - negative	Neglig	gible - negative	
Comment on significance	Hardened surface and establishment of foundations for houses may impede sub-surface flows towards the wetland, although these are not expected to form a major or important contribution to the water balance of the wetland. This is supported by the fact that the numerous developments around the wetland do not appear to have affected the size of the wetland area over time.				
Cumulative impacts	Without mitige wetland.	ation this impact could result in the	e impediment of s	ub-surface flow to the	

Project Phase	Construction
Impact	Landscape Connectivity
Description of	Cut-off of natural dispersal and foraging movement by animals, impacts on suitable link
impact	or important corridor, fragmentation of ecological infrastructure
Mitigable	Low Mitigation will slightly reduce the significance of impacts
Potential	• The 6m wide servitude along the northern boundary of the development area can
mitigation	 serve as a minor corridor for smaller wildlife, linking the wetland to the west with the coastal dunes to the east. The eastern and western border of the servitude running along the northern boundary of the development must remain unfenced to allow wildlife to move between the coastal dune system and the wetland. Vegetation within this servitude should also not be cleared and must be maintained in a natural state. Control of alien invasive species must be undertaken if necessary. Biodiversity conservation of the important coastal foredune habitat that serves as a minor faunal corridor along the edge of the property.
Assessment	Without mitigation With mitigation

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Nature	Negative		Negative	
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Permanent	Impact may be permanent, or in excess of 20 years
Extent	Very limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings
Intensity	Medium	Natural and/or social functions and/or processes are notably altered	Low	Natural and/or social functions and/or processes are somewhat altered
Probability	Almost certain	It is most likely that the impact will occur	Probable	Has occurred here or elsewhere and could therefore occur
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	Medium	The affected environment will only recover from the impact with significant intervention
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance		Minor - negative		Minor - negative
Comment on significance	Minor - negativeMinor - negativeThe natural fauna in the foredune and wetland areas may be intact, but the line of development along the coast has effectively cut-off natural dispersal and foraging movement by animals (with the exception of some birds) between the two habitat types in the area. The study site thus represents a very narrow and relatively natural link between the natural habitats between the foredune area and the wetland. This link is however not considered to be a suitable link or important corridor due to its narrow width and its generally poor condition, translating to a LOW site sensitivity. The properties fall within an ESA that has been designated as an ecological corridor. It is likely that some wildlife may use the wetland as a refuge and move in between the wetland and the coastal dune system. The development of the property will fragment this ESA which could affect the movement of wildlife.			
impacts		woold result in insignificant come		

Project Phase		Oper	ation	
Impact		Eradication of A	lien Vegetatio	n
Description of impact	Imp	acts on biodiversity / natur	al habitats / ir	ncreased fire risk
Mitigable	High	Mitigation exists and will a	considerably re	educe significance of impacts
Potential mitigation	 All invasive alien plants should be completely cleared from the property, and where a tree or bush cover is desired, replaced with suitable indigenous species. The suitable planting list of trees and shrubs must be used, and is incorporated into this EMP (Section 12). An Alien Control Plan should be compiled to systematically remove and control alien plant species. Follow-up operations must be done. Minimise disturbance to the natural vegetation using low impact manual labour techniques. 			
Assessment	Witho	ut mitigation		With mitigation
Nature	Negative		Positive	
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Brief	Impact will not last longer than 1 year

Extent	Limited	Limited to the site and its immediate surroundings	Limited	Limited to the site and its immediate surroundings	
Intensity	Very high	Natural and/ or social functions and/ or processes are majorly altered	Medium	Natural and/or social functions and/or processes are notably altered	
Probability	Certain / Definite	There are sound scientific reasons to expect that the impact will definitely occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge	
Reversibility	Low	The affected environment will not be able to recover from the impact - permanently modified	Medium	The affected environment will only recover from the impact with significant intervention	
Resource irreplaceability	Not relevant		Not relevant		
Significance	High	- negative		Moderate - positive	
Comment on significance	The habitats available on the study site are all anthropogenically impacted, to a variable degree, but the current situation is set to deteriorate swiftly due to the devastating impact of invasive alien Acacia cyclops, which in the last few years has spread over much of the site and which will mature to the further detriment of all indigenous plant and animal species.				
Cumulative impacts	Without mitigation t the municipality. Sp	he development would no ecifically design guidelines	ot be meeting for the local o	design guidelines enforced by prea.	

Project Phase		Operation				
Impact	Formal gardens					
Description of	Habitat	Habitat loss for terrestrial wildlife, fragmentation of ecological corridor				
impact		F				
Mitigable	Low	Mitigation will slightly redu	uce the signifi	cance of impacts		
Potential mitigation	 Areas that are not required for development purposes should remain natural with indigenous vegetation. All alien invasive plants must be removed from the site on an on-going basis. Investing landowners within the proposed development should be encouraged to avoid planting exotic plants in favour of locally indigenous plants. Many of the dune-scrub plants are easy to propagate and many are available at 					
Assessment	Without mitigation With mitigation			With mitigation		
Nature	Negative	~	Positive			
Duration	Brief	Impact will not last longer than 1 year	Permanent	Impact may be permanent, or in excess of 20 years		
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to specific isolated parts of the site		
Intensity	Negligible	Natural and/ or social functions and/ or processes are negligibly altered	Very low	Natural and/ or social functions and/ or processes are slightly altered		
Probability	Highly unlikely / None	Expected never to happen	Almost certain /	It is most likely that the impact will occur		

			Highly		
			probable		
Confidence	Medium	Determination is based	Medium	Determination is based on	
		on common sense and		common sense and general	
		general knowledge		knowledge	
Reversibility	Medium	The affected	Not		
		environment will only	relevant		
		recover from the			
		impact with significant			
		intervention			
Resource	Low	The resource is not	Not		
irreplaceability		damaged irreparably	relevant		
		or is not scarce			
Significance	Negligible - negative Minor - positive				
Comment on	With mitigation the impact is likely to have more beneficial impact to retaining natural				
significance	biodiversity, than without mitigation.				
Cumulative	Without mitigation t	his impact could result in th	ne spread of a	alien invasive plants and the loss	
impacts	of indigenous vege	tation.			

Impacts foreseen during the construction phase for Alternative 1 (15 Residential Units):

Project Phase		Constr	ruction	
Impact	Clear	ance of vegetation for the const	ruction of the o	dwelling and associated
Description of		infrastr	ructure	uluilalite montalities to various
Description of	Loss of sens	silive dune vegetation, habitat id	loss for terrestric	al wildlife, mortalities to various
mpaci	ecological infrastructure			
Mitigable	Medium	Mitigation exists and will notabl	lv reduce siani	ificance of impacts
Potential	Whe	rever there are sections of	undisturbed	natural habitat within the
mitigation	 Wherever there are sections of undisturbed natural habitat within the development area, they should not be impacted by the building activities and should be conserved as small islands of natural resources for the small wildlife of the area. These animals include skinks, rodents, birds and invertebrates. the removal and translocation of protected plants if found should be undertaken prior to construction clearing activities. A permit is required prior to removal. Protected plants must either be moved to a safer, no-go area on the property or taken to a nursery for temporary storage until rehabilitation takes place. Access by heavy machinery should be limited on the site. Only areas necessary for the development footprint should be cleared and the remainder of the property should be left natural. During the construction phase of the proposed development, disturbance to the primary dune system must be avoided. 			
	footprint of the proposed development.			
Assessment		Without mitigation		With mitigation
Nature	Negative	Impact may be permanent	Negative	Impact may be permanent
Doralion	remunem	or in excess of 20 years	remunem	or in excess of 20 years
Extent	Limited	Limited to the site and its	Verv	Limited to the site and its
		immediate surroundings	limited	immediate surroundings
Intensity	High	Natural and/ or social functions and/ or processes are significantly altered	Low	Natural and/or social functions and/or processes are somewhat altered
Probability	Certain / Definite	There are sound scientific reasons to expect that the impact will definitely occur	Probable	Has occurred here or elsewhere and could therefore occur
Confidence	High	Substantive supportive data exists to verify the assessment	Medium	Determination is based on common sense and general knowledge
Reversibility	Low	The affected environment will not be able to recover from the impact - permanently modified	Medium	The affected environment will only recover from the impact with significant intervention
Resource irreplaceability	High	The resource is damaged irreparably but is represented elsewhere	Low	The resource is not damaged irreparably or is not scarce
Significance		Minor - negative	N	egligible - negative
Comment on significance	The high infe (high confid	estation of alien species at the sit ence) translates to a LOW site se	te, together w ensitivity.	ith the absence of plant SCC
Cumulative impacts	The impact	would result in insignificant cumu	ulative effects	

Project Phase		Constr	ruction	
Impact		Landscape	Connectivity	
Description of	Cut-off of natural dispersal and foraging movement by animals, impacts on suitable link			
impact	or important corridor, fragmentation of ecological infrastructure			
Mitigable	Low Mitigation will slightly reduce the significance of impacts			
Potential	• The &	6m wide servitude along the north	hern boundary	of the development area can
mitigation	serve	e as a minor corridor for smaller	wildlife, linking	g the wetland to the west with
	the c	coastal dunes to the east, provide	ed that it is kep	ot clear of invasive alien plants.
	 Biodi 	iversity conservation of the impo	rtant coastal f	oredune habitat that serves as
	a mi	nor faunal corridor along the edg	ge of the prop	perty.
Assessment		Without mitigation		With mitigation
Nature	Negative		Negative	I
Duration	Permanent	Impact may be permanent,	Permanent	Impact may be permanent,
		or in excess of 20 years	.,	or in excess of 20 years
Extent	Limited	Limited to the site and its	Very	Limited to the site and its
		immediate surroundings	limited	immediate surroundings
Intensity	Meaium	Natural ana/or social	LOW	Natural ana/or social
		are notably altered		are somewhat altered
Probability	Probable		Para /	
FIODODINITY	FIODODIE	elsewhere and could	improbable	extreme circumstances
		therefore occur	impiopopie	and/or might occur for this
				project although this has
				rarely been known to result
				elsewhere
Confidence	High	Substantive supportive data	Medium	Determination is based on
	Ũ	exists to verify the assessment		common sense and general
				knowledge
Reversibility	Low	The affected environment will	Medium	The affected environment
		not be able to recover from		will only recover from the
		the impact - permanently		impact with significant
		modified		intervention
Resource	Medium	The resource is damaged	Low	The resource is not
irreplaceability		irreparably but is represented		damaged irreparably or is
<u>.</u>		elsewhere		not scarce
Significance		Minor - negative	N	egligible - negative
Comment on	The natural	tauna in the foreaune and we	eniana areas r	nay be infact, but the line of
significance		hi diong the coast has effective	f como birde) h	atural dispersal and toraging
	in the grea. The study site thus represents a yony parrow and relatively natural link between			
	the natural habitats between the foredupe area and the wetland. This link is however not			
	considered	to be a suitable link or importe	ant corridor d	ue to its narrow width and its
	generally pr	por condition, translating to a LO	W site sensitivit	
Cumulative	The impact	would result in insignificant cumu	lative effects	/
impacts				

Project Phase		Construction			
Impact		Primary Dune System			
Description of	Im	pacts on natural coastal foredune habitat, increased wind erosion			
impact					
Mitigable	Medium	Mitigation exists and will notably reduce significance of impacts			
Potential mitigation	 The project 	primary dune system at the beach front (mostly outside the properties) should be disturbed during the construction or operational phases of the elopment. area must be actively excluded from the developed area and must not suffer dumping and other negative impacts that so often accompany building ects.			

	• The o	area must be designated as a "N	lo Go" area.		
	 If ac 	cess will be allowed to the beac	ch, then a boc	ard walk system will have to be	
	cons	tructed to minimize disturbance	of this sensitive	e area.	
Assessment		Without mitigation		With mitigation	
Nature	Negative		Low negative	0	
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Permanent	Impact may be permanent, or in excess of 20 years	
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings	
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Very low	Natural and/or social functions and/or processes are slightly altered	
Probability	Probable	Has occurred here or elsewhere and could therefore occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	
Confidence	High	Substantive supportive data exists to verify the assessment	Medium	Determination is based on common sense and general knowledge	
Reversibility	Low	The affected environment will not be able to recover from the impact - permanently modified	Medium	The affected environment will only recover from the impact with significant intervention	
Resource irreplaceability	Medium	The resource is damaged irreparably but is represented elsewhere	Low	The resource is not damaged irreparably or is not scarce	
Significance		Minor - negative	N	egligible - negative	
Comment on	This is an imp	portant coastal habitat that shoul	d be conserve	ed for biodiversity conservation,	
significance	to prevent in property.	to prevent increased wind erosion and as a minor faunal corridor along the edge of the property.			
Cumulative impacts	The impact	The impact would result in insignificant cumulative effects			

Project Phase		Construction			
Impact		Sedime	entation		
Description of	Sedir	nentation of the wetland caused	d by erosion fr	om the construction site.	
impact					
Mitigable	Medium	Mitigation exists and will notable	ly reduce sigr	ificance of impacts	
Potential mitigation	 A silt fence must be installed perpendicular to the angle of the slope to trap any soil or sediment mobilised from the site during the construction phase. Silt fences must be installed between the site and the Robberg Road, and in between Robberg Road and the buffer. The site must be monitored after every rainfall event to ensure that no sediment is being washed into the wetland by erosion. The laydown area and stockpiles of construction materials or excavated materials must be located on as flat an area as possible and should not drain towards the wetland. If necessary, stockpiles must be protected (e.g. through use of sandbags and/or tarpaulins) to prevent materials being washed downslope towards the 				
Assessment		Without mitigation		With mitigation	
Nature	Negative		Low negativ	/e	
Duration	Short term	Impact will last between 1	Brief	Impact will not last longer	
		and 5 years		than 1 year	
Extent	Very	Limited to the site and its	Very	Limited to the site and its	
	limited	immediate surroundings	limited	immediate surroundings	

Intensity	Low	Natural and/or social	Very low	Natural and/or social	
		functions and/or processes		functions and/or processes	
		are somewhat altered		are slightly altered	
Probability	Likely	The impact may occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment	
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact	
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce	
Significance	N	legligible - negative	N	egligible - negative	
Comment on	The lower se	ection of the development slope	s down toward	ds the wetland. Clearing areas	
significance	of the site and the road in preparation for construction will expose bare soil which could				
	potentially be mobilised into the wetland during heavy rainfall events. The buffer is				
	nowever ex	pecied to provide good protect	ion under such	i circumstances.	
Cumulative	The impact	would result in insignificant cumu	native effects.		
impacts					

Project Phase	Construction					
Impact		Waste I	Pollution			
Description of	Pollutior	n of wetland and buffer caused	by waste gene	erated by the construction		
impact		pro	cess.			
Mitigable	High	High Mitigation exists and will considerably reduce significance of impacts				
Potential mitigation	 All construction waste generated on-site during construction must be adequately managed. Separation and recycling of different waste materials should be supported. All construction waste materials must be collected and disposed of at a suitable waste facility. No dumping of construction material within the wetland or wetland buffer may take place. The buffer and wetland area must be monitored on a weekly basis to clean-up any waste that may have been blown from the construction site; and Adequate sanitary facilities and ablutions must be provided for all personnel throughout the project area. Use of these facilities must be enforced (these facilities must be kept clean so that they are a desired alternative to the support of the super of the support of the super of the support of the super					
Assessment		Without mitigation		With mitigation		
Nature	Negative		Low negative			
Duration	Short term	Impact will last between 1 and 5 years	Brief	Impact will not last longer than 1 year		
Extent	Very limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings		
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Very low	Natural and/or social functions and/or processes are slightly altered		
Probability	Likely	The impact may occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has		

				rarely been known to result elsewhere
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance	١	legligible - negative	N	egligible - negative
Comment on significance	Construction activities are likely to generate significant quantities of solid waste that could pollute the wetland and buffer area. In addition, the high numbers of construction workers present on site will generate a significant amount of human waste, which could also pollute the wetland.			
Cumulative impacts	The impact	would result in insignificant cumu	ulative effects.	

Project Phase	Construction				
Impact		Construction	on Vehicles		
Description of	Impairme	ent of water quality and disturba	ince to buffer	caused by the operation of	
impact	Ve	chicles and heavy machinery wi	thin close prox	imity to the wetland.	
Mitigable	High	Mitigation exists and will consid	lerably reduce	significance of impacts	
Potential	Con	struction activities must be cont	fined to clearl	y demarcated areas so as to	
mitigation	prev	ent unnecessary disturbance to	the wetland a	nd buffer.	
	• No v	ehicles are to park or operate wi	thin the buffer	of the wetland (i.e. all activities	
	must	be restricted to Robberg Road	or the eastern	side of Robberg Road).	
	Excc	avators and all other machinery o	and vehicles m	lust be checked for oil and fuel	
	leak	s daily. No machinery or vehicles	s with leaks are	permitted to work on site.	
	NO TI	uei storage, retueiling, venicie m	aintenance of	venicle depots to be allowed	
		elling and fuel storage groat a	nd grogs used	for the servicing or parking of	
	 Kelu vehi 	cles and machinery must be low	na areas used	rvious bases and should have	
	bunc	ds around them (sized to contain	n 110 % of the	tank capacity) to contain any	
	poss	ible spills. These areas must not b	e located with	nin any natural drainage areas	
	or preferential flow paths and must be located outside of the buffer of the				
	wetland.				
	• The contractors used for the project should have spill kits available to ensure that				
	any fuel or oil spills are clean-up and discarded correctly.				
Assessment		Without mitigation		With mitigation	
Nature	Negative		Low negative	9	
Duration	Short term	Impact will last between 1	Brief	Impact will not last longer	
		and 5 years		than 1 year	
Extent	Very	Limited to the site and its	Very	Limited to the site and its	
	limited	immediate surroundings	limited	immediate surroundings	
Intensity	Low	Natural and/or social	Very low	Natural and/or social	
		functions and/or processes		functions and/or processes	
		are somewhat altered	_	are slightly altered	
Probability	Likely	The impact may occur	Rare /	Conceivable, but only in	
			Improbable	extreme circumstances,	
				and/or might occur for this	
				project annough this has	
				raroly boon known to regult	
				and/or might occur for this project although this has	

Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment	
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact	
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce	
Significance	Negligible - negative Negligible - negative				
Comment on significance	Operation of vehicles in close proximity to the wetland could result in spillages or leaks of hydrocarbons (fuel and oil) and could lead to unnecessary disturbance of the wetland and its buffer.				
Cumulative impacts	The impact	would result in insignificant cumu	ulative effects.		

Project Phase		Con	struction	
Impact		Geotechnical restr	aints due to so	andy soils
Description of impact	Settlement issues, slope stability problems, potential erosion.			
Mitigable	High	Mitigation exists and wil	l considerably	reduce significance of impacts
Potential mitigation	 Areas that are disturbed through building activities (such as the excavations for sewerage pipelines) should be suitably rehabilitated without delay. Failure to do so will have a knock-on effect on biodiversity in the form of an increase in wind erosion, soil exposure and a loss of the soil micro-organisms that are essential for plant growth. Use of complete cover of locally chipped woody material (for example Acacia cyclops stems and branches but not the seed pods). 			
	Foundations			
	 Foundations: The four stands positioned to the west of the site are on top of the respective dunes and care is required to minimize damage to the surrounding environment and here mini or bored piles could be employed after a platform has been cut. On the remainder of the sites (five eastern stands) where the existing ground level is more even rafts and re-compaction operations can be done and side slopes can be protected by shoring. The founding conditions improve with depth in these dune sand areas. Organic matter, such as roots and humus/topsoil should be removed from the footprint of structures and stockpiled separately for landscaping purposes. Excavations may be highly unstable at angles steeper than 35° and battering or shoring of excavation sidewalls may be required. Lateral support systems may be required along site boundaries. Piled foundations should only be considered for excessively heavy structures as 			
Assessment	Witho	ut mitigation		With mitigation
Nature	Negative		Negative	
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Brief	Impact will not last longer than 1 year
Extent	Very limited	Limited to specific isolated parts of the site	Very limited	Limited to specific isolated parts of the site
Intensity	Very high	Natural and/ or social functions and/ or processes are majorly altered	Low	Natural and/or social functions and/or processes are somewhat altered

Probability	Certain / Definite	There are sound scientific reasons to expect that the impact will definitely occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	
Confidence	High	Substantive supportive data exists to verify the assessment	Medium	Determination is based on common sense and general knowledge	
Reversibility	Low	The affected environment will not be able to recover from the impact - permanently modified	Medium	The affected environment will only recover from the impact with significant intervention	
Resource	Not relevant		Not		
irreplaceability			relevant		
Significance	Modero	ate - negative		Negligible - negative	
Comment on	The natural angle	e of repose is at least ar	oproximately 4	40° but excavated faces in the	
significance	neighboring prop	erty remained marginally	y stable for ex	tended periods at over 50°. This	
	was especially evident where there were fine roots present in the excavated face. Shoring				
	was not required i	in cut of up to 2m deep.		a second all second the second fill a second	
Cumulative	without mitigation	n, the geotechnical restro	aints on the site	e coula result in significant	
impacts	destruction to the	development site.			

Project Phase	Construction					
Impact		Noise pollution				
Description of		Noise caused by m	achinery and	staff		
impact						
Mitigable	Low Mitigation does not exist; or mitigation will slightly reduce the					
		significance of impacts				
Potential	Constructio	n activities must only take	place during	normal working times between		
mitigation	07:00-17:00	on weekdays.				
	Machinery	may be fitted with silences	to dampen	noise.		
	 Staff must b 	e reminded that they are	working with	in a residential area and noise		
	levels must	be kept low.				
Assessment	Withou	ut mitigation		With mitigation		
Nature	Negative		Negative			
Duration	Brief	Impact will not last	Brief	Impact will not last longer		
		longer than 1 year		than 1 year		
Extent	Limited	Limited to the site and	Limited	Limited to the site and its		
		its immediate		immediate surroundings		
		surroundings				
Intensity	Very low	Natural and/ or social	Negligible	Natural and/ or social		
		functions and/ or		functions and/ or processes		
		processes are slightly		are negligibly altered		
		altered				
Probability	Almost certain /	It is most likely that the	Almost	It is most likely that the		
	Highly probable	impact will occur	certain /	impact will occur		
			Highly			
			probable			
Confidence	Medium	Determination is based	Medium	Determination is based on		
		on common sense and		common sense and general		
		general knowledge		knowledge		
Reversibility	High	The affected	High	The atfected environmental		
		environmental will be		will be able to recover from		
				the impact		

		able to recover from		
Resource	Not relevant		Not	
irreplaceability			relevant	
Significance	Minor - negative		N	egligible - negative
Comment on	Some extent of noise pollution during construction is			ted; however, with mitigation
significance	the impact will be r	educed.		
Cumulative	No cumulative impacts exist.			
impacts				

Project Phase	Construction						
Impact		Visual impact					
Description of	Visu	ual & aesthetic consequen	ices of the pr	oposed project			
impact							
Mitigable	Medium	Mitigation exists and will	notably redu	ce significance of impacts			
Potential	 The Archite 	ectural Design Guidelines	proposed for	or the development must be			
mitigation	adopted to	mitigate the colours, heig	ghts, disturbai	nce areas, maximum footprint,			
	vegetation,	etc, which will all cont	ribute to a	smaller visual impact on the			
	ianascape.	and magging be implem	antad durin	a the construction phase to			
	 Ine necess protect the 	natural vegetation to cor	nemed domination	dust and visual intrusion			
	 Appoint a I 	andscape consultant to re	ecommend a	ind implement the introduction			
	of an india	enous landscape plan to	protect the	existing indigenous vegetation			
	and to prep	pare a landscape plan for i	implementati	ion in the private and common			
	areas.						
	Implement	external lighting restriction	s and guidelin	nes.			
Assessment	Withou	ut mitigation		With mitigation			
Nature	Negative		Negative				
Duration	Short term	Impact will last	Short term	Impact will last between 1			
Evila el	Lippito d	between I and 5 years	Lincito d	and 5 years			
extent	Limiea	its immediate	Limileo	Limited to the site and its			
		surroundings					
Intensity	Medium	Natural and/or social	low	Natural and/ or social			
		functions and/or		functions and/ or processes			
		processes are notably		are somewhat altered			
		altered					
Probability	Certain / Definite	There are sound	Likely	The impact may occur			
		scientific reasons to					
		expect that the impact					
Confidence	High	Substantive supportive	High	Substantive supportive data			
Connuence	lign	data exists to verify the	riigri	exists to verify the			
		assessment		assessment			
Reversibility	Medium	The affected	High	The affected environmental			
,		environment will only	Ũ	will be able to recover from			
		recover from the		the impact			
		impact with significant					
		intervention					
Resource	Not relevant		Not				
Significance	AAir o	r poggtivo	relevant				
Comment on	The proposal is ser	sitive towards the charac	ter of the av	rea and attempts to create a			
significance	unique sense of pla	ice that will blend in and c	ompliment th	e ambience of the surrounding			
	area.						
Cumulative	No cumulative imp	acts exist.					
impacts							

Project Phase		Constru	ction	
Impact		Employi	ment	
Description of	Empowerment of th	ne local community memb	pers living in th	ne area relating to temporary
impact		employment o	pportunities	
Mitigable	Medium	Mitigation only exists to e	ensure that the	e positive impact is followed
		through.		
Potential	 Use existing 	social structures and co	ommunicatio	n channels to ensure social
mitigation	representatio	on.		
	 Use local lab 	our and source local mate	erials as far a	s possible.
Assessment	Withou	it mitigation		With mitigation
Nature	Negative		Positive	
Duration	Short term	Impact will last	Short term	Impact will last between 1
		between 1 and 5 years		and 5 years
Extent	Local	Extending across the	Local	Extending across the site
		site and to nearby		and to nearby settlements
		settlements		
Intensity	Low	Natural and/ or social	Low	Natural and/ or social
		functions and/ or		functions and/ or processes
		processes are		are somewhat altered
		somewhat altered		
Probability	Rare / Improbable	Conceivable, but only	Almost	It is most likely that the
		in extreme	Cerrain /	Impact will occur
		might occur for this	nigniy	
		project although this	probuble	
		bas rarely been known		
		to result elsewhere		
Confidence	Medium	Determination is based	Medium	Determination is based on
connachee	Medion	on common sense and	Mediom	common sense and
		general knowledge		general knowledge
Reversibility	Not relevant	general knowledge	Not	general knowledge
			relevant	
Resource	Not relevant		Not	
irreplaceability			relevant	
Significance	Negligib	le - negative	Ν	legligible - positive
Comment on	Due to the proposed	d development being on a	a small-scale,	there is a low difference in
significance	impacts between w	ithout mitigation and with	mitigation. H	owever, as the impact would
	be positive for the lo	ocal community to be emp	ployed during	construction, mitigation is
	recommended to e	nsure this occurs.		_
Cumulative	Minor upliftment for	the local community.		
impacts				

Impacts foreseen during the operational phase for Alternative 1 (15 Residential Units):

Project Phase	Operation				
Impact		Visual / Sens	se of place		
Description of impact	Visual impacts of structures / aesthetic consequences due to incorrect or excessive liahting, especially outdoor liahting				
Mitigable	Medium	Mitigation exists and will	notably reduc	e significance of impacts	
Potential	 Municipal b 	y-laws need to be adhere	ed to.		
mitigation	 Re-vegetati 	ion and Landscaping of c	open space a	reas with suitable indigenous	
	vegetation.				
	Systematic	removal and follow-up op	erations of invo	asive alien plants.	
Accessment	Adnere to A	Architectural Guidelines an	ia Design Man T	Ual.	
Assessment	Nogativo	or mingation	Negative Lev		
Nature	Rermanant	Imp got may be	Regulive LOV	N Impaget will pet least longer	
Duration	Permaneni	permanent, or in excess of 20 years	BLIGI	than 1 year	
Extent	Limited	Limited to the site and its immediate surroundings	Limited	Limited to the site and its immediate surroundings	
Intensity	Medium	Natural and/or social functions and/or processes are notably altered	Low	Natural and/ or social functions and/ or processes are somewhat altered	
Probability	Probable	Has occurred here or elsewhere and could therefore occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	
Confidence	Medium	Determination is based on common sense and general knowledge	d Medium Determination is based common sense and general knowledge		
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	High The affected environmento will be able to recover from the impact		
Resource irreplaceability	Not relevant		Not relevant		
Significance	Mino	r - negative	Ne	egligible - negative	
Comment on significance	Lighting, specifically outdoor lighting is not only aesthetic, but it provides a level of security to property owners. Therefore, outdoor lighting is essential, but should be implemented in a way which does not cause negative impacts to neighbours. The planned residential development will be similar to existing and planned residential developments to the north and south of the property. The site lies within the urban edge for Plettenberg Bay and the proposed upmarket residential development is compatible with surrounding land uses. The proposal is sensitive towards the character of the area and attempts to create a unique sense of place that will blend in and compliment the ambience of the surrounding area.				
Cumulative impacts	Without mitigation by the municipality	the development would n . Specifically design guide	ot be meeting lines for the loc	design guidelines enforced cal area.	

Project Phase	Operation				
Impact	Stormwater Management				
Description of		Accelerated erosion / polluti	on into sub-surface	e water.	
impact					
Mitigable	High Mitigation	n exists and will considerably re	educe the significa	nce of impacts	
Potential	 A storm w 	vater drainage system as indico	ated in the EMPr mu	ust be adhered to and the	
mitigation	system sh	ould lead run- off water away	from sensitive area	as, in order to prevent any	
	soil erosic	n.			
	 Use rainw 	ater collection tanks to serve a	as a retention vesse	el in downpours.	
	 Driveway 	s can be constructed from gro	ass blocks to allow	for effective retarding of	
	surface fl	ow and facilitate percolation.			
	The com	non roadways will have a kerb	and channel side	drain where mostly water	
	trom the	road is collected, transported	and transferred to	a trapezoidal grass block	
	side drair	n and alsonarged into an effec	ctive 1,2m deep stil	ling gabion champer that	
		tion chamber will facilitate ner	realation and will n	at have an outlet	
		mon champer will racilitate per	reolation and will r	ioi nave an oulier.	
Assessment	Wi	thout mitigation	Wit	h mitigation	
Nature	Negative		Low Negative		
Duration	Short term	Impact will last between 1	Brief	Impact will not last	
Donalion		and 5 years	bilot	longer than 1 year	
Extent	Limited	Limited to the site and its	Verv limited	Limited to specific	
		immediate surroundinas		isolated parts of the	
				site	
Intensity	Medium	Natural and/or social	Low	Natural and/or social	
		functions and/or processes		functions and/or	
		are notably altered		processes are	
				somewhat altered	
Probability	Almost certain	It is most likely that the	Rare /	Conceivable, but only	
	impact will occur improbable in extreme				
				might occur for this	
				project although this	
				nas rareiy been known	
Confidence	High	Substantivo supportivo data	Lliah	Substantive supportive	
Connidence	riigi i	exists to verify the	riigi i	data exists to verify the	
		assessment		assessment	
Reversibility	Medium	The affected environment	High	The affected	
No versionity	modiom	will only recover from the	i ngri	environmental will be	
		impact with significant		able to recover from	
		intervention		the impact	
Resource	Low	The resource is not	Low	The resource is not	
irreplaceabilit		damaged irreparably or is		damaged irreparably	
У		not scarce		or is not scarce	
Significance	Neg	ligible - negative	Min	or - negative	
Comment on	The developmer	nt has a small catchment area.	. The development	has permeable dune	
significance	sand soil conditio	ons and noticeable runoff is no	t envisaged. There	are also large open	
	areas where run	off can be dissipated. A higher	density developm	ent may result in more	
	runoff with increa	ased hardened surfaces.			
Cumulative	Without mitigation	on this impact could result in po	otential erosion dov	wnhill of the site caused	
impacts	by stormwater flo	ow.			

Project Phase		Opera	tion		
Impact		Stormwater Runo	ff into Wetland		
Description of impact	Alteration c	of surface flows into the wetland	caused by increa	sed stormwater runoff.	
Mitigable	High Mitigati	on exists and will considerably re	educe the significa	ince of impacts	
Potential	Stormw	ater from erven on the west f	acing slope of th	ne development must be	
mitigation	attenuc	ated on site.			
	Stormw	ater from the access road leadin	g into the develop	oment must be attenuated	
	onsite (j	prior to any discharge into the b	uffer of the wetlar	id).	
	A suitab	ble stormwater plan must be cor	npiled for the sect	tion of Robberg Road that	
	WIII DE T	arrea and upgraded. The plan h	nust discharge stol	rmwater into the adjacent	
	therefor	re be reduced with energy dis	vinaters prior to di	scharge into the wetland	
	huffer	e be reduced with energy diss	ipulers prior to di	schulge into the weitund	
Assessment	V V	Vithout mitigation	Wi	th mitigation	
Nature	Negative		Low Negative		
Duration	Permanent	Impact may be permanent.	Permanent	Impact may be	
		or in excess of 20 years		permanent, or in	
		, ,		excess of 20 years	
Extent	Very limited	Limited to specific isolated	Very limited	Limited to specific	
		parts of the site		isolated parts of the	
				site	
Intensity	Medium	Natural and/or social	Low	Natural and/or social	
		functions and/or processes		functions and/or	
		are notably altered		processes are	
Day has hall the			David (somewhat altered	
Probability	Almost	It is most likely that the	Kare /	Conceivable, but only	
	Certain		Improbuble	circumstances and/or	
		might occur for this			
	project altho				
	has rarely k				
				to result elsewhere	
Confidence	High	Substantive supportive data	High	Substantive supportive	
		exists to verify the assessment		data exists to verify the	
				assessment	
Reversibility	High	The affected environmental	High	The affected	
		will be able to recover from		environmental will be	
		the impact		able to recover from	
Resource		The resource is not damaged		The resource is not	
irreplaceabilit		irreparably or is not scarce	LOW	damaged irreparably	
V				or is not scarce	
Significance		Minor - negative	Neglig	gible - negative	
Comment on	The developme	ent will result in an increase in the	e area of paved/h	nardened surfaces. This will	
significance	generate incre	ased volumes of stormwater runc	off which will flow c	lown towards the wetland.	
	The main entra	nce road leading from Robberg	g Road into the de	evelopment is also likely to	
	become an in	nportant conduit for stormwate	er down towards	the wetland, as will the	
	upgraded sec	tion of Robberg Road. Existing	g developments	along tarred sections of	
	Kobberg Koad	(to the south) have not resulted	in obvious impact	s the wetland as a result of	
	stormwater rur	ion. Adequate management	or stormwater she	buid meretore effectively	
Cumulativo	Without mitiaat	ion this impact could result in pa	tential stormwate	r rupoff downbill of the site	
impacts	towards the we	atland			

Project Phase		Opera	tion	
Impact		Impervious Surfaces	and Foundations	
Description of	Alteration	of sub-surface flows into the weth	and caused by imp	pervious surfaces and
impact		founda	tions	
Mitigable	High Mitigo	tion exists and will considerably re	educe the significar	nce of impacts
Potential	 Stormy 	water management should encou	urage infiltration of	water into the soil profile
mitigation	and o	ther on site attenuation (i.e. using	grass pavers etc.).	
Assessment		Without mitigation	Wit	h mitigation
Nature	Negative	r	Low Negative	1
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Permanent	Impact may be permanent, or in excess of 20 years
Extent	Very limited	Limited to specific isolated parts of the site	Very limited	Limited to specific isolated parts of the site
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Very low	Natural and/ or social functions and/ or processes are slightly altered
Probability	Probable	Has occurred here or elsewhere and could therefore occur	Probable	Has occurred here or elsewhere and could therefore occur
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact
Resource irreplaceabilit y	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance		Minor - negative	Neglig	ible - negative
Comment on significance	Hardened surface and establishment of foundations for houses may impede sub-surface flows towards the wetland, although these are not expected to form a major or important contribution to the water balance of the wetland. This is supported by the fact that the numerous developments around the wetland do not appear to have affected the size of the wetland area over time. A higher density development may result in more runoff with			
Cumulative impacts	Without mitige wetland.	ation this impact could result in the	e impediment of su	b-surface flow to the

Project Phase		Construction
Impact		Landscape Connectivity
Description of	Cut-off of no	atural dispersal and foraging movement by animals, impacts on suitable link
impact		or important corridor, fragmentation of ecological infrastructure
Mitigable	Low	Mitigation will slightly reduce the significance of impacts
Potential mitigation	• The 6	m wide servitude along the northern boundary of the development area can
	 The c The c boun betw servit Cont Biodir a mir 	coastal dunes to the east. eastern and western border of the servitude running along the northern adary of the development must remain unfenced to allow wildlife to move reen the coastal dune system and the wetland. Vegetation within this ude should also not be cleared and must be maintained in a natural state. rol of alien invasive species must be undertaken if necessary. versity conservation of the important coastal foredune habitat that serves as nor faunal corridor along the edge of the property.

Assessment		Without mitigation		With mitigation
Nature	Negative		Negative	
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Permanent	Impact may be permanent, or in excess of 20 years
Extent	Very limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings
Intensity	Medium	Natural and/or social functions and/or processes are notably altered	Low	Natural and/or social functions and/or processes are somewhat altered
Probability	Almost certain	It is most likely that the impact will occur	Probable	Has occurred here or elsewhere and could therefore occur
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	Medium	The affected environment will only recover from the impact with significant intervention
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance		Minor - negative		Minor - negative
Comment on significance	The natural development movement h in the area. the natural h considered generally po ESA that has use the wet system. The movement of A higher de wildlife, espe	fauna in the foredune and we nt along the coast has effective by animals (with the exception of The study site thus represents a ver- nabitats between the foredune of to be a suitable link or imported for condition, translating to a LO is been designated as an ecolog land as a refuge and move in b development of the property we of wildlife.	etland areas r vely cut-off n f some birds) k ery narrow and area and the v ant corridor du W site sensitivi ical corridor. If between the v vill fragment the less vegetation	nay be intact, but the line of atural dispersal and foraging between the two habitat types d relatively natural link between vetland. This link is however not ue to its narrow width and its ity. The properties fall within an t is likely that some wildlife may vetland and the coastal dune his ESA which could affect the on within the development for
impacts	ine impact	would result in insignificant cumu	native effects	

Project Phase	Operation				
Impact	Eradication of Alien Vegetation				
Description of impact	Impacts on biodiversity / natural habitats / increased fire risk				
Mitigable	High Mitigation exists and will considerably reduce significance of impacts				
Potential mitigation	 All invasive alien plants should be completely cleared from the property, and where a tree or bush cover is desired, replaced with suitable indigenous species. The suitable planting list of trees and shrubs must be used, and is incorporated into this EMP (Section 12). An Alien Control Plan should be compiled to systematically remove and control alien plant species. Follow-up operations must be done. Minimise disturbance to the natural vegetation using low impact manual labour techniques. 				
Assessment	Without mitigation With mitigation				

Nature	Negative		Positive			
Duration	Permanent	Impact may be	Brief	Impact will not last longer		
		permanent, or in excess		than 1 year		
Extent	Limited	Limited to the site and	Limited	Limited to the site and its		
		its immediate		immediate surroundings		
		surroundings				
Intensity	Very high	Natural and/or social	Medium	Natural and/or social		
		runctions and/or		runctions and/or processes		
		altered		die holdbly dieled		
Probability	Certain / Definite	There are sound	Rare /	Conceivable, but only in		
		scientific reasons to	improbable	extreme circumstances,		
		expect that the impact		and/or might occur for this		
				rarely been known to		
				result elsewhere		
Confidence	Medium	Determination is based	Medium	Determination is based on		
		on common sense and		common sense and general		
Poversibility		general knowledge	Medium	knowledge		
Reversionity		environment will not be	Mediom	only recover from the impact		
		able to recover from		with significant intervention		
		the impact -				
		permanently modified				
Kesource irreplaceability	Not relevant		NOT			
Significance	Hiah	- negative	Televani	Moderate - positive		
Comment on	The habitats availa	The habitats available on the study site are all anthropogenically impacted, to a variable				
significance	degree, but the current situation is set to deteriorate swiftly due to the devastating impact					
	of invasive alien Acacia cyclops, which in the last few years has spread over much of the					
Computer!	site and which will mature to the turther detriment of all indigenous plant and animal species.					
cumulative	the municipality. Specifically design guidelines for the least gras					
impacts	the municipality. Specifically design guidelines for the local area.					

Project Phase	Operation					
Impact		Formal gardens				
Description of	Habitat loss for terrestrial wildlife, fragmentation of ecological corridor					
impact						
Mitigable	Low Mitigation will slightly reduce the significance of impacts					
Potential mitia ation	Areas that are not required for development purposes should remain natural with					
minguion	 All alien invasive plants must be removed from the site on an on-going basis. Investing landowners within the proposed development should be encouraged to avoid planting exotic plants in favour of locally indigenous plants. Many of the dune-scrub plants are easy to propagate and many are available at nearby nurseries. A list of suitable plants is be included in this EMP (Section 12). 					
Assessment	Without mitigation		With mitigation			
Nature	Negative		Positive			
Duration	Brief	Impact will not last longer than 1 year	Permanent	Impact may be permanent, or in excess of 20 years		
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to specific isolated parts of the site		
Intensity	Negligible	Natural and/ or social functions and/ or	Very low	Natural and/ or social functions and/ or processes are slightly altered		

		processes are negligibly altered		
Probability	Highly unlikely / None	Expected never to happen	Almost certain / Highly probable	It is most likely that the impact will occur
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	Not relevant	
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Not relevant	
Significance	Negligible - negative		Minor - positive	
Comment on	With mitigation the impact is likely to have more beneficial impact to retaining natural			
significance	biodiversity, than without mitigation.			
Cumulative	Without mitigation this impact could result in the spread of alien invasive plants and the loss			
impacts	of indigenous vegetation.			